

Department: Physics



Our Curriculum Aims:

- Satisfying a student's scientific curiosity and developing it further.
- Highlighting the importance of science and physics to society in the past, present and future.
- Preparing students with a solid foundation for the knowledge and skills required to enter a wide range of technical and scientific professions such as engineering and medical professions.
- Making students aware of the range of technical/ scientific professions available and what is needed to pursue those careers.
- Ensuring a firm knowledge base for the transition to the next Key Stage.
- Development of core scientific and analytical skills and scientific literacy that are essential for informed decision making regardless of career choice.
- Develop an understanding of the big issues in science that affect everybody such as nuclear power / renewable energy and global warming.
- Promoting equal opportunities.

Year 9

	Name of topic	Key Content of the Topic	Assessment points
HT 1	Space physics (KS3)	Gravity, seasons, orbital motion, the solar system.	End of topic test. Y 9 end of year exam April 25th
HT 2	Electricity (KS4)	Circuit theory, charge, current, voltage, power.	Sub-topic test. Y 9 end of year exam April 25th
HT 3	Electricity and Static Electricity (KS4)	Charge, static charge, electric fields,	Y 9 end of year exam April 25th
HT 5	Some parts of: Particle model of matter (KS4)	Density	Assessed in Y10 exam
HT 6		Heat transfer: Conduction, convection and radiation.	Assessed in Y10 exam

What can parents do to support their sons?

Parents can regularly check and monitor work set on 'Satchel one'. We have a list of resources that students and parents can use such as online Kerboodle and Seneca learning.

GCSE Course Followed: Physics

Specification: AQA ([Syllabus code 8463](#))

Why Choose GCSE

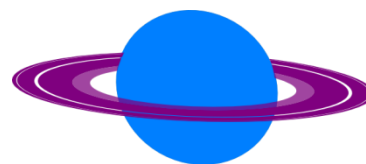
GCSE physics has a broader range of topics than the alternative Dual award physics. This is an advantage for those who wish to have a wider range of 'scientific literacy' and knowledge. It is also beneficial for those who wish go on to study A-level physics. Having said that, the disadvantage of having studied physics in dual award should not be seen as a serious impediment to A-level physics studies.



Physics GCSE (AQA Exam board)

All GCSE Physics students will study:

- Forces
- Energy
- Waves (sound and light)
- Electricity
- Magnetism and electromagnetism
- Particle model of matter
- Atomic structure (nuclear physics)
- Space physics



Dual award science (physics) students will study all of the above topics apart from Space physics. However, most of the topics in dual award are explored in less depth but at the same level of demand and difficulty.

Key Stage Four Curriculum Overview

Year 9: Electricity KS4 – see information above

Year 10:

	Name of topic	Key Content of the Topic	Assessment points
HT 1	Energy	Energy forms such as kinetic, gravitational potential energy, elastic potential energy. The concept of work done and energy transfers. The law of energy conservation. Power and efficiency.	End of topic tests. March 29 th Year 10 exam
HT 2	Energy	Thermal energy (internal energy). Specific heat capacity, specific latent heat. Changes of state. Energy resources.	End of topic tests. March 29 th Year 10 exam
HT 3	Forces	Gravity, resultant forces, motion: kinematics and motion graphs.	End of topic tests. March 29 th Year 10 exam.
HT 4	Forces	Newton's three laws of motion. Pressure in fluids. Application of forces to stopping distances.	End of topic tests. March 29 th Year 10 exam.
HT 5	Forces Waves	Momentum. Moments, levers and gears. Sound waves in fluids and solids.	End of topic tests. March 29 th Year 10 exam.
HT 6	Waves	Electromagnetic waves. Black body radiation	End of topic tests. March 29 th Year 10 exam.

Year 11:

	Name of topic	Key Content of the Topic	Assessment points
HT 1	Electromagnetism	Magnets, magnetic fields.	End of topic test. Exam 8 th Dec
HT 2	Electromagnetism	motors and generators.	End of topic test. Exam 8 th Dec
HT 3	Atomic structure	The atom, Radioactivity	End of topic test. Exam 8 th Dec
HT 4	Space physics	Red shift, Big bang, satellites, orbits, life cycle of stars.	End of topic test. Exam 8 th Dec
HT 5	Revision		
HT 6	NA		GCSE exams

Recommended Revision Guides for GCSE

Online textbook (which includes revision material) available via 'Kerboodle' login. A range of **Revision guides** and **workbooks** are recommended to students and parents. E.g. **Grade 8-9 booster book** from cgp. Various **past examination questions** are to be found on the Office 365 group 'STU physics GCSE'. We also recommend the sample AQA exam paper packs from CGP, Collins and Letts. The specification should be used as a comprehensive revision list: <http://filestore.aqa.org.uk/resources/physics/specifications/AQA-8463-SP-2016.PDF>

Support available for GCSE Students

All pupils are invited to **mentoring sessions**; these are held by sixth form mentors on Tuesday and Thursday lunchtimes (12.20-13.00). Pupils are encouraged to **ask their teachers** for additional assistance and can work in the department at any time.

